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IN THE

Supreme Court of the United States

OCTOBER TERM, 1964

No. 367

AMP INCORPORATED,
Petitioner,

v.

BURNDY CORPORATION and
ARTCRAFT ELECTRIC SUPPLY CO.,
Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

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PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

Petitioner, AMP Incorporated, prays that a Writ of Certiorari issue to review the Judgment of the United States Court of Appeals for the Third Circuit, entered in the above-entitled case on May 18, 1964.

Opinions Below

The opinion of the United States District Court for the District of Delaware is reported at 215 F. Supp. 3, and is printed in the Appendix, pp. A-1 to A-21. The opinion of the Court of Appeals, reported at 136 U. S. P. Q. 617 is printed in the Appendix, pp. A-22 to A-29.

Jurisdiction

The judgment of the Court of Appeals was entered May 18, 1964. A Petition for Rehearing, filed May 29, 1964, was denied on June 16, 1964. The jurisdiction of this Court is invoked under 28 U. S. C. 1254(1).

Questions Presented

1. Did the Congress, by its 1952 enactment of Section 103 of Title 35, merely codify the standard of patentable invention which had been applied in recent court decisions, as has been ruled by the Courts of Appeals for the First, Third, Fourth, Fifth, Sixth and Seventh Circuits, or did the Congress intend to re-establish the less "hostile" standard of invention originally promulgated by this Court, as has been repeatedly ruled by the Court of Appeals for the Second Circuit, which ruling has been followed by the Court of Appeals for the District of Columbia?

2. When the active judges of the Court of Appeals for the Third Circuit have ruled the last thirty-six consecutive patents before them invalid or unenforceable (while the Courts of Appeals of the other circuits were ruling up to 82% of the patents before them valid) should the Supreme Court grant certiorari to establish a uniform construction of the statutory standard of patentable invention?

3. Can a Court of Appeals properly determine that a patent is invalid on the basis of its own appraisal of what should have been apparent to a hypothetical "per-

son of ordinary skill in the art" where the District Court had found that real persons skilled in the art, including the accused infringer itself, had actually tried and failed to solve the long-standing problem which was involved, and that the accused infringer had further recognized the patentability of the invention by first copying the invention and then attempting to obtain a patent on it, including some of the very claims in suit?

Constitutional Provision and Statutes Involved

The Constitutional provision involved is Article I, Section 8, Clause 8.

The statutes involved are 35 U. S. C. Section 103, and the first sentence of Section 282.

These provisions are set forth in the Appendix, p. A-30.

Statement of the Case[1]

This is far more than a mere patent infringement case. Petitioner is seeking to have this Court construe Title 35, Section 103, which was an entirely new provision enacted as part of the Patent Act of 1952, and has never yet been construed by this Court. This statute purports to define patentable invention, and its construction is therefore a critical issue in every patent infringement action.

[1] The Statement of the Case is based entirely upon findings of fact made by the District Court, which were not reversed on appeal. All of the footnote citations in this section of the petition are to the appropriate portions of the District Court opinion, as printed in the Appendix.

The Patented Invention

The patent involved in this action is U. S. Patent No. Re. 23,688, which was issued to petitioner as the assignee of William S. Watts and which is the basic patent on "pre-insulated" electrical connectors.

The patented "pre-insulated" connectors revolutionized the electrical connector industry by providing the first practical connector in which the copper ferrule of the connector could be cold forged with a copper conductor therein into a unitary mass by pressure applied through a permanently affixed insulating sleeve without damaging the insulation. The invention completely supplanted the hand-applied and string-tied insulating sleeves of the "post-insulated" electrical connections which were the standard of the aircraft industry until 1944.[2]

Copying of the Patented Connectors by Respondent Burndy

For a number of years prior to 1944, respondent Burndy supplied the aircraft industry with "post-insulated" connectors.[3] Burndy recognized the many disadvantages of these connectors and had made unsuccessful attempts to provide an acceptable substitute.[4]

In 1944, Burndy learned of petitioner's pre-insulated connectors, obtained samples, examined and tested them, and thereafter changed over its production to this type of connector.[5]

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[2] Appendix, pp. A-2 to A-6.

[3] Appendix, p. A-6.

[4] *Ibid.*

[5] *Ibid.*

Despite having copied the pre-insulated connectors from petitioner, Burndy filed an application for patent in the name of its then Chief Engineer and now President, Julian Rogoff, claiming pre-insulated connectors in the broadest terms.[6]

When the Patent Office rejected Rogoff's application in view of Watts' patent, Rogoff conceded Watts' priority of invention by cancelling all of his broad claims and restricting his application to a single limited claim.[7]

However, after obtaining U. S. Patent No. 2,429,585 on Rogoff's application, Burndy attempted to reissue that patent to obtain claims identical with some of the claims of the Watts reissue patent, but Burndy was held to be barred from applying for a reissue containing Watts' broader claims.[8]

REASONS FOR GRANTING THE WRIT

I. This Court should resolve the conflict which exists between the rule of the Courts of Appeals for the First, Third, Fourth, Fifth, Sixth and Seventh Circuits that the Congress, by its enactment of Section 103 of Title 35, intended merely to codify the standard of patentable invention established by recent Court decisions, and the rule of the Courts of Appeals for the Second and District of Columbia circuits that the Congress intended to re-establish the less "hostile" standard originally promulgated by this Court.

The Patent Act of 1952 completely codified the patent laws, with extensive additions and changes. The

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[6] *Ibid.*

[7] Appendix, p. A-7. This claim was limited to a physical property of the plastic which the Patent Office ruled was not disclosed in the Watts patent (although Rogoff later testified that this physical property was actually present in petitioner's commercial connectors, which he had obtained and examined back in 1944).

[8] Appendix, p. A-8.

most important new statutory provision contained in that Act is Section 103, which established, for the first time, a statutory definition of patentable invention. Although this statutory provision represents the pivotal issue in every patent infringement action, it has never been construed by this Court.

Section 103 provides that even if an invention is not "identically disclosed" by the prior art, as provided in the preceding Section 102, a patent cannot be obtained thereon

> "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

The Courts of Appeals for a number of the circuits have ruled that this new provision did not change the standard of the invention but was merely a "codification" of the decisional law then in effect. See *Carlson & Sullivan* v. *Bigelow & Douse*, 202 F. (2d) 654, 655-656 (C. A. 1st, 1953); *Stanley Works* v. *Rockwell Mfg. Co.*, 203 F. (2d) 846, 849 (C. A. 3d, 1953); *Interstate Rubber Products Co.* v. *Radiator Specialty Co.*, 214 F. (2d) 546, 549 (C. A. 4th, 1954); *Vincent* v. *Sani-Citrus Products Co.*, 215 F. (2d) 305, 315 (C. A. 5th, 1954); *General Motors Corp.* v. *Estate Stove Co.*, 203 F. (2d) 912, 913-915 (C. A. 6th, 1953); *Borkland* v. *Pederson*, 244 F. (2d) 501, 503-504 (C. A. 7th, 1957).

However, the Court of Appeals for the Second Circuit has repeatedly ruled to the contrary. In *Lyon* v. *Bausch & Lomb Optical Co.*, 224 F. (2d) 530, 534-537

(C. A. 2d. 1955)[9], Judge Learned Hand reviewed how the standard of patentable invention applied by the Courts had been progressively raised from the level originally established in *Hotchkiss* v. *Greenwood*, 11 How. 248, 267 (1850) to the much stricter test of *Jungerson* v. *Ostby & Barton Co.*, 335 U. S. 560, 69 S. Ct. 269 (1949) and *Great Atlantic & Pacific Tea Co.* v. *Supermarket Equipment Corp.*, 340 U. S. 147, 71 S. Ct. 127 (1950), despite the fact that the original doctrine was still given "lip service" and had never been expressly overruled.

Although observing that Section 103 "describes itself as a codification of existing law", Judge Hand concluded that the statute effectively repudiates the harsher standard of invention applied in recent decisions and "restores the original gloss" to the rule of *Hotchkiss* v. *Greenwood*.

In the later case of *Reiner et al.* v. *I. Leon Co.*, 285 F. (2d) 501, 503 (C. A. 2d, 1960), Judge Hand explained his earlier decision in the *Bausch & Lomb* case, *supra*, in these words:

> "There can be no doubt that the Act of 1952 meant to change the slow but steady drift of judicial decision that had been hostile to patents, which made it possible for Mr. Justice Jackson in dissent to speak of the 'strong passion in this Court for striking them' (patents) 'down so that the only patent that is valid is one which this Court has not been able to get its hands on.' Jungerson v. Ostby & Barton Co., 335 U. S. 560, 572, 69 S. Ct. 269, 274, 93 L. Ed. 235. That was in 1945, while the test laid down in

[9] Cert. denied, 350 U. S. 911, 76 S. Ct. 193; rehearing denied 350 U. S. 955, 76 S. Ct. 341.

> Hotchkiss v. Greenwood, 11 How. 248, 266, 13 L. Ed. 683, still had a nominal authority, of which little remained in actual application. We still cannot escape the conclusion—as we could not when Lyon v. Bausch & Lomb Optical Co., supra, was decided in 1955—that Congress deliberately meant to restore the old definition, and to raise it from a judicial gloss to a statutory command."

The Court of Appeals for the District of Columbia, in its first decision interpreting Section 103, questioned the "colorable view that the new Act has relaxed case law criteria for invention," citing the comments on the floor of the Senate at the time of its passage to the effect that the Act was merely a "codification" of existing law. *New Wrinkle, Inc.* v. *Watson*, 206 F. (2d) 421, 422 (C. A. D. C. 1953). However, in a later decision, the Court reversed its position, citing Judge Hand's opinion in the *Bausch & Lomb* case, *supra*, and stating:

> "We may safely assume that the Patent Act of 1952, 35 U. S. C. § 103, was intended to restore the law 'to what it was when the Court announced the definition of invention.' " *L-O-F Glass Fibers Co. et al.* v. *Watson*, 228 F. (2d) 40, 47 (C. A. D. C. 1955).

This conflict between the various circuits was recognized by a Committee of the Senate itself, in a 1961 review of the judicial treatment of the 1952 act:

> "Not only is the standard of invention clouded in uncertainty, but the various circuits are unable even to agree as to the legislative intent expressed in Section 103." [10]

[10] Staff Report of the Subcommittee on Patents, Trademarks and Copyrights of the Senate Committee on the Judiciary, U. S. Government Printing Office, 1961.

The conflict has also been the subject of considerable comment in legal periodicals:

> "The uniformity and stabilization sought to be achieved by the enactment of Section 103 have not been realized. In fact, the statute seems to have contributed even more uncertainty to an area in which the law was already vague and unsettled." [11]

As might be expected, this conflict as to the standard of patentable invention has produced some wildly disparate results in patent cases in the various circuits.

II. After the active judges of the Court of Appeals for the Third Circuit have ruled thirty-six consecutive patents invalid or unenforceable (while the Courts of Appeals of other circuits were ruling up to 82% valid) this Court should grant certiorari to establish a uniform construction of the statutory standard of patentable invention.

A comparison of the record of the Court of Appeals for the Third Circuit in patent infringement cases with the records of the Courts of Appeals for other circuits reveals a striking contrast between the attitudes of the various Courts toward patents.

During the last six years,[12] the Court of Appeals for the Third Circuit has decided 28 patent infringement cases involving a total of 37 patents. It has held 31 of the 37 patents invalid and 5 others unenforceable on the ground of misuse. It has held only one patent valid

[11] The Standard of Patentability—Judicial Interpretation of Section 103 of the Patent Act, 63 Columbia Law Review 306, 323 (1963).

[12] Based on cases reported in Volumes 117 through 141, U. S. Patents Quarterly.

and enforceable and, in that case,[12a] one of the three judges sitting on the Court was a visiting District Court judge, and another a retired Senior Judge. Excluding this one case, in which only one active judge of the Court of Appeals was sitting, the Court has held 36 consecutive patents invalid or unenforceable.

During the last five years,[13] the Courts of Appeals for the other judicial circuits, in a total of 201 patent infringement cases, have ruled on the validity of 257 patents, of which 111 (or 43.2%) were ruled valid and 146 invalid. In four of the circuits, the Courts of Appeals ruled more patents valid than they ruled invalid; these circuits are the Fourth (55.5% valid), the Fifth (60.9%), the Seventh (55.3%) and the Tenth (82.3%).

The complete statistics are as follows:

Circuit	Cases	Patents Ruled On	Valid	Invalid	% Valid
First	12	19	6	13	31.8%
Second	33	40	9	31	22.4%
Fourth	19	27	15	12	55.5%
Fifth	20	25	15	10	60.0%
Sixth	20	28	12	16	42.9%
Seventh	39	47	26	21	55.3%
Eighth	13	13	1	12	7.7%
Ninth	38	46	17	29	37.0%
Tenth	7	12	10	2	82.3%
Total	201	257	111	146	43.2%

[12a] *Benger Laboratories Ltd.* v. *R. K. Laros Co.*, 317 F. (2d) 455 (C. A. 3d, 1963).

[13] Based upon cases reported in Volumes 122 through 141, United States Patents Quarterly.

Since there is no reason to assume that the patents involved in the suits brought in the Third Circuit are any better or any worse, on the average, than those involved in suits brought in other circuits, the foregoing statistics would appear to admit of no other conclusion than that the Court of Appeals for the Third Circuit applies a much harsher standard of patentable invention than the Courts in the other circuits—a standard so unattainable that, as a practical matter, the patent system has ceased to exist in the Third Circuit.

This disparity is not only common knowledge among practicing attorneys, but it has even been the subject of comment in the lay press.[14]

There is no basis for expectation that this deplorable situation will be cured in any way other than review by this Court. However, this Court's failure to grant certiorari in any case involving the validity of a patent since the 1952 Patent Act became effective, has given rise to a widespread sentiment expressed in the caption of one section of a magazine article devoted to this problem:

"The Supreme Court Loses Interest."[15]

The time is long overdue for this Court to establish, for the uniform guidance of all the Circuit and District Courts, a definitive standard of patentable invention, based upon the new statutory provisions of 35 U. S. C. 103.

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[14] See, for example, an article entitled "The Patent Mess" in *Fortune*, September, 1962.

[15] *Ibid.*

III. The Court of Appeals erred in ruling the Watts reissue patent invalid on the basis of its own appraisal of what "must have" been apparent to a hypothetical person of ordinary skill in the art, where the District Court found that real persons skilled in the art, including the accused infringer itself, had actually tried and failed to solve the long-standing problem which was involved, and that the accused infringer had further recognized the patentability of the invention by first copying the invention and then attempting to obtain a patent on it, including some of the very claims in suit.

The District Court found as a fact that the "post-insulation" method had a number of serious disadvantages which were widely recognized. Nevertheless, for lack of any better method of insulating pressure-type electrical connections, post-insulation continued to be the standard insulating procedure in the aircraft industry throughout the period preceding World War II and for the first several years of the War, when this country's aircraft production was at an all-time peak.[16]

The District Court also found that respondent Burndy itself had, throughout this period, attempted to provide an acceptable substitute for post-insulation, but without success.[17]

The Court further found that when petitioner's pre-insulated electrical connectors were placed on the market, Burndy obtained and examined samples of them, and shortly thereafter placed on the market its own copy of these connectors.[18]

The Court even found that Burndy (having thus plagiarized petitioner's pre-insulated connectors)

[16] Appendix, pp. A-4 to A-6.

[17] Appendix, pp. A-6, A-8.

[18] Appendix, p. A-6.

brazenly filed an application for patent claiming such connectors as a basic invention of its own! And in the resulting patent it even attempted to obtain some of the *identical claims* of petitioner's patent in suit![19]

None of these findings of fact was reversed *or even discussed* by the Court of Appeals. Instead the Court of Appeals held the Watts patent "invalid for want of invention" (just as it had done with all of the preceding thirty patents on whose validity the regular members of the Court had ruled).

It was a stipulated fact that the plastic material disclosed by Watts had been generally available in experimental quantities as early as 1932 and in commercial quantities as early as 1935. If the use of this material in pre-insulated connectors had in fact been "obvious" to those of "ordinary skill in the art," certainly the aircraft industry would not have wasted hundreds of thousands of man-hours and millions of dollars in using the old, awkward "post-insulation" method at a time when the industry was urgently seeking ways of increasing aircraft production by more efficient utilization of manpower.

Nor would respondent Burndy have experimented for years in unsuccessful attempts to provide a practical pre-insulated connector.

The patented connector is admittedly a simple device: it has no moving parts, and only two parts in all. It is understandable why a Court now having before it only the completed device might tend to regard it as just too simple to justify a patent monopoly. But

[19] Appendix, pp. A-6 to A-8

the criterion of patentability established by 35 U. S. C. 103 is not how simple an invention looks *after it is made*, but whether it would have been "obvious at the time the invention was made"—in other words, whether it would have been obvious to one who did not have the benefit of knowing the solution.

This is an inherently difficult determination for the Court to make, for it is humanly impossible to eradicate from one's mind the knowledge of the solution and to view the problem as it actually confronted those working in the art. For that reason, this Court has long rejected hindsight appraisal as a proper test of patentability. As the Court stated in *Diamond Rubber Co.* v. *Consolidated Rubber Tire Co.*, 220 U. S. 428, 31 S. Ct. 444, 447 (1911):

> "Many things, and the patent law abounds in illustrations, seem obvious after they have been done, and 'in the light of the accomplished result,' it is often a matter of wonder how they so long 'eluded the search of the discoverer and set at defiance the speculations of inventive genius.' *Pearl* v. *Ocean Mills*, 2 Bann. & Ard. 469, Fed. Cas. No. 10,876, 11 Off. Gaz. 2. Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not."

In the present case the Court of Appeals need not have resorted to speculation concerning whether the in-

vention would have been "obvious" to some *hypothetical* person of "ordinary skill in the art." Here the evidence shows what *real* persons having "ordinary" or even extraordinary skill in the art, including the respondent Burndy itself, *actually* did or failed to do when they attempted to provide a pre-insulated connector, employing all of the technology available to them at the time.

Judge Learned Hand, in his last decision in a patent case, expressed with inexorable logic the importance of judging inventions, where possible, on the basis of what men were *actually* able to do, rather than on what it seems, in retrospect, they *should have been* capable of doing:

> "The test laid down is indeed misty enough. It directs us to surmise what was the range of ingenuity of a person 'having ordinary skill' in an 'art' with which we are totally unfamiliar; and we do not see how such a standard can be applied at all except by recourse to the earlier work in the art, and to the general history of the means available at the time. To judge on our own that this or that new assemblage of old factors was, or was not 'obvious' is to substitute our ignorance for the acquaintance with the subject of those who were familiar with it. There are indeed some signposts: e.g. how long did the need exist; how many tried to find the way; how long did the surrounding and accessory arts disclose the means; how immediately was the invention recognized as an answer by those who used the new variant? In the case at bar the answers to these questions all favor the conclusion that it demanded more intuition than was possessed by the 'ordinary' worker in the field." *Reiner et al*

d/b/a Kaynar Co. et al v. *I. Leon Co., Inc.*, 285 F. (2d) 501, 503, 504 (C. A. 2d, 1960).

Judge Hand, who probably decided more patent infringement cases than any other judge in the history of the U. S. patent system, had long championed this approach:

> "Courts, made up of laymen as they must be, are likely either to underrate, or to overrate, the difficulties in making new and profitable discoveries in fields with which they cannot be familiar; and, so far as it is available, they had best appraise the originality involved by the circumstances which preceded, attended and succeeded the appearance of the invention. Among these will figure the length of time the art, through needing the invention, went without it; the number of those who sought to meet the need, and the period over which their efforts were spread; how many, if any, came upon it at about the same time, whether before or after, and—perhaps most important of all—the extent to which it superseded what had gone before. We have repeatedly declared that in our judgment this approach is more reliable than a priori conclusions drawn from vaporous, and almost inevitably self-dependent, general propositions." *Safety Car Heating and Lighting Co.* v. *General Electric Co.*, 155 F. (2d) 937, 939 (C. A. 2d, 1946)

Conclusion

Entirely apart from any consideration of the merits of the present case, it is urgently necessary that this Court grant certiorari to resolve the uncertainty and conflict which exists in the various Circuit Courts respecting the standard of patentable invention which Congress intended to promulgate in 35 U. S. C. 103.

The opposite extremes to which the various circuits have gone in their interpretation of this statutory provision are illustrated by the fact that the regular judges of the Court of Appeals for the Third Circuit have held the last 36 consecutive patents invalid or unenforceable while other circuits were holding up to 82% valid.

The present case is a dramatic example of the virtually prohibitive standard of patentable invention applied in the Third Circuit. It seems logically *impossible* to conclude that Watts' invention was "obvious" to those of "ordinary skill in the art," in the face of the facts that respondent Burndy itself had not only repeatedly tried and failed to solve the problem involved but had further affirmed the patentability of the invention by the incredible actions of copying it from petitioner and then attempting to obtain a patent on it—including even some of the *identical claims* whose validity Burndy now challenges.

If the patent laws of the United States are to have any force at all within the Third Judicial Circuit, patents must at least be enforced there against the very infringers who have thus not only proven but even asserted their validity.

Respectfully submitted,

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Opinion of District Court

UNITED STATES DISTRICT COURT
DISTRICT OF DELAWARE

Civ. Action No. 1967.

AMP INCORPORATED, *Plaintiff*,

v.

BURNDY CORPORATION, Arteraft Electric Supply Co., *Defendants*.

Decided March 4, 1963.

Thomas S. Lodge, Connolly, Bove & Lodge, Wilmington, Del., William C. Conner, and Truman S. Safford, Curtis, Morris & Safford, New York City, for plaintiff.

Richard F. Corroon, Berl, Potter & Anderson, Wilmington, Del., Floyd H. Crews, Morris Nelson, and William F. Dudine, Jr., Darby & Darby, Daniel Gersen, and George M. Szabad, Blum, Jolles, Haimoff, Szabad & Gersen, New York City, and Ernest Fanwick, Norwalk, Conn., for defendants.

Opinion of District Court

LEAHY, *Senior District Judge*.

I. PRE-LITIGATION BACKGROUND

Plaintiff AMP, Incorporated, sued Burndy Corporation for infringement. Defendant's answer denies infringement, charges the patent in suit is invalid, and seeks a declaratory judgment that the patent is invalid and not infringed. The patent, No. Re. 23,688 (7/21/52), was granted as a re-issue of No. 2,410,321 (10/29/46) on application of William S. Watts filed December 14, 1943. He assigned to plaintiff AMP, here.

The patent is for an electrical connector having a tubular metal ferrule adapted to receive an electrical conductor—i. e., the end portion of an insulated wire from which the insulation has been stripped to bare the inner conductor. Surrounding the metal ferrule is a tube of insulating plastic which is capable of transmitting from a crimping die to the ferrule and conductor, sufficient force to produce plastic or irrecoverable deformation of the ferrule and conductor without cutting or excessive extrusion of the plastic, so, after crimping, the plastic sleeve furnishes an insulating sheath for the ferrule to prevent an electrical short circuit.[1]

About 30 years ago the common method of making electrical connections was by soldering.[2] This method had certain disadvantages. For example, a defective

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[1] PX 1; Watts, R. 249-256.

[2] Whitley, R. 82; Bosworth, R. 148.

soldered joint is hard to tell from a good one, and this makes visual inspection of soldered electrical short circuits practically impossible.[3] By the late 1930's, industry gave up the soldered connections and began to use the crimp-type connectors of the general type here to be considered.[4] In the crimp-type connectors, the crimping pressure compresses the ferrule and conductor strands to remove as much as possible the void space between the strands of the conductor and between the conductor and the ferrule to form a solid metalic cross-section. By reason of the compression, the cross-sectional area of both the ferrule and the strands are reduced. This deformation of the ferrule and conductor strands is required so as to flatten out their surface irregularities and bring them into surface-to-surface contact with one another.[5] When crimp-type connectors started to be used, the standard method was the "post insulation" method. This called for a length of insulating tubing (first varnished cambric and later soft plastic) which was slipped over the wire before it was inserted into the connector ferrule. After the connector was crimped onto the wire, the insulating sleeve was pushed over the ferrule of the connector and tied in place with a piece of string.[6] This was the best way known prior to Watts, and was the method in military and commercial aircraft manufacturing be-

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[3] Whitley, R. 86, 87; Bosworth, R. 155; Meyer, R. 435, 436.

[4] Bosworth, R. 145.

[5] Whitley, R. 75, 78, 92, 93.

[6] PX 8; Watts, R. 195, 196; Bosworth, R. 150, 151; Tweddell, R. 213, 214; Druliner, R. 224, 228; Troeger, R. 290-292.

fore World War II and for several years thereafter.[7] It would appear the patentee, Watts, had conception and had reduced his invention to practice about March 10, 1942.[8]

Watts' first pre-insulated connector was made with vinylidene chloride tubing ("Saran"). Other types of plastic tubing were tried, among which was a slightly plasticized copolymer of vinyl chloride and vinyl acetate ("Irv-O-Lite").[9] The latter had certain advantages over Saran, and is used as the illustrative material in the specifications of the patent.[10] Irv-O-Lite, in slightly plasticized form, was used in plaintiff AMP's first commercial connectors and is used today.[11] It was sold in a soft, plasticized form, and it was also commercially available in the normally rigid, flexible, slightly plasticized form as stated in the patent.[12] In the early 1940's reduction of the percentage of plasticizer in the copolymers of vinyl chloride and vinyl acetate was well known—either by baking or by the use of solvents.[13] Watts' pre-insulated connectors had a number of advantages over the former post-insulation method. Among these: 1. saving in time and installation costs;[14] 2. inventory reduction of the number of

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[7] Ibid.

[8] PX 3; Watts, R. 195-202; Sowa Dep., DX 148, pp. 37-39.

[9] Watts, R. 199-203; Sowa Dep., DX 148, pp. 37-41.

[10] PX 1, Col. 3, lines 34-37.

[11] Watts, R. 205, 206; Paules, R. 3001, 3006-8.

[12] Holcombe, R. 578, 596, 598; PX 43.

[13] Mark, R. 2252-2255.

[14] Watts, R. 254.

parts required to be stocked;[15] 3. reduction of corrosion;[16] 4. elimination of the hazard of displacement of the insulation from the conductor;[17] 5 saving in space and weight;[18] 6. greater support for the wire and reduction of wire breakage;[19] 7. color coating of the plastic insulation and the crimping tool to guarantee use of the proper tool for the size of the connector to be crimped;[20] 8. utilization of automatic machines into which the connectors are fed in strips whereby the individual connectors are severed and applied to the wire with resultant less manufacturing costs.[21]

Plaintiff AMP started manufacturing and sale of pre-insulated connectors under Watts' invention sometime during the latter part of 1943.[22] AMP's connectors caught the attention of the industry. On a cost analysis basis, aircraft manufacturers found the new connectors resulted in a saving.[23] They reduced the safety hazard of aircraft in flight. The past had shown failure of a single connector had caused the loss of planes and passengers.[24] Gaining wide acceptance in

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[15] Ibid. 255.

[16] Troeger, R. 282-286.

[17] Watts, R. 255.

[18] Ibid.

[19] Ibid. 255-256.

[20] Ibid. 252-254.

[21] PX 16, 17; Watts, R. 256-260; PX 20, p.

[22] PX 9; Watts, R. 386; Bosworth, R. 157.

[23] PX 14; Druliner, R. 222-229; PX 13; Bosworth, R. 151, 152; Tweddell, R. 212-217; PX 18; Troeger, R. 282-296.

[24] Bosworth, R. 153, 155, 161-163, 189; Troeger, R. 282-289, 294, 295.

the industry, the new connectors displaced from commercial use the old post-insulation method.[25] Since 1945 to time of trial, plaintiff AMP has sold about 3 billion of these connectors with a total dollar volume of around $82,500,000.[26]

While plaintiff AMP started commercial manufacturing of the pre-insulated connectors in the latter part of 1943,[27] defendant Burndy did not enter the field until mid-1944 and did not offer a complete line of pre-insulated connectors until 1948.[28] Prior to this, e. g., from 1924-1936, Burndy made bolt-type connectors for use in electrical power distribution.[29] In 1936, it began to make uninsulated crimp-type connectors.[30] During World War II it supplied the aircraft industry with post-insulated connectors.[31] Disadvantages were observed and Burndy sought an acceptable substitute.[32] It first learned of the AMP pre-insulated connectors in 1944, obtained samples, examined and tested them.[33] On June 6, 1944, its chief engineer, Julian Rogoff [now president of defendant Burndy], made an application for a patent on pre-insulated connectors.[34] During

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[25] Druliner, R. 228, 229; Tweddell, R. 217; Troeger, 294, 295.

[26] PX 24; Holcombe, R. 405.

[27] See n. 22, supra.

[28] Rogoff, R. 1582.

[29] DX 114; Rogoff, R. 1634, 1635, 1655, 1656.

[30] Rogoff, R. 1635.

[31] PX 85; DX 112; Rogoff, R. 1687, 1688, 1740, 1741.

[32] Rogoff, R. 1664-1716; DX 89-94.

[33] Rogoff, R. 1717, 1718.

[34] PX 31, p. 5, Claim 1; DX 114; Rogoff, R. 1720, 1806, 1807.

prosecution, the Patent Office Examiner cited original Watts No. 2,410,321.[35] Rogoff filed no affidavit attesting to his conception prior to Watts' filing date of December 14, 1943; neither did he copy Watts' claims (under Patent Office Rule 205) in order to start an interference to determine priority of invention between himself and Watts. On the contrary, Rogoff confined his application to a single claim which recited that the plastic insulating material had the property of retaining the shape of the indenting die and was successful in showing that Watts patent did not disclose this feature.[36] On October 20, 1947, Rogoff's application was granted and there issued Burndy's present No. 2,429,585. Eight days later, October 28, 1947, AMP filed application for reissue of the Watts patent.[37] The application contained, in addition to the four original claims, a fifth claim which was a copy of the single claim of the Rogoff patent.[38] An interference was declared between Watts and Rogoff with respect to the subject matter of Rogoff's single claim.[39] The Board of Interference Examiners ruled that Watts did not disclose the characteristic of Rogoff's connector "retaining the shape" of the indenting die.[40] Following the interference proceeding, the Patent Office allowed to Watts Claims 5, 6

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[35] PX 31, p. 20.

[36] PX 31, pp. 9, 21.

[37] Holcombe, R. 461-465.

[38] DX 7, p. 8.

[39] DX 7, p. 83.

[40] DX 156, pp. 14-16; PX 2, Col. 1, line 53, to Col. 2, line 13.

and 7 of his Reissue Patent.[41] After issuance of the Watts Reissue Patent, Rogoff filed an application for reissue of his No. 2,429,585, copying Claims 5, 6 and 7 of the Watts Reissue Patent.[42] Rogoff's application for reissue was rejected by the Patent Office Examiner and was affirmed by the Patent Office Board of Appeals[43] and by the Court of Customs and Patent Appeals.[44]

II. Validity

[1, 2] 1. I do not think the various prior patents or publications cited by defendant constitute a *full* anticipation of Watts' invention within the meaning of 35 U.S.C. § 103. That the invention was not obvious is shown by the fact industry in general was not satisfied with the old "post-insulation" method for a number of years. There was an unsatisfied need and there were specific unsuccessful attempts to satisfy it. While the patented invention has enjoyed a strong degree of commercial success, this alone is not the test if the patent is otherwise weak.[45] But, in this case it has been a factor taken into consideration because value of the invention has been shown.

2. As to prior art, Smith No. 2,173,668 is the closest cited by defendant, because it is the only reference

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[41] PX 1.

[42] DX 158, pp. 18, 19.

[43] PX 122.

[44] 261 F.2d 601, 46 CCPA 733.

[45] See, Chemical Construction Corp. v. Jones & Laughlin Steel Corp., 3 Cir., 311 F.2d 367.

which discloses the use of a copper ferrule with an insulating sleeve.[46] Smith was considered by the Patent Office during the prosecution of the original Watts patent.[47] But then, after amendments, Watts was granted his patent when he finally distinguished from Smith.

Grypma No. 2,276,511 discloses a device which is not in itself an electrical connector; it is in fact intended to support and insulate a splice made by joining two wires one to another.[48] Heidebrecht No. 2,229,849 is for a device which is not an electrical connector; it is a post-insulating tube that is wrapped around a splice after it has been completed by twisting two wires together.[49] Patnode No. 2,085,995 relates to a wire insulated by several layers of enamel.[50] Pfeffer No. 2,122,537 does not cover electrical connectors, but discloses a lid for a can.[51]

3. While cited prior art is not sufficient to throw a shadow on validity of Watts, it nevertheless contains sufficient teachings which were available to defendant Burndy to make its own devices without becoming an infringer of Watts. Watts, as will be shown in the discussion of infringement, infra, does not have the

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[46] DX 113.

[47] PX 25, p. 12.

[48] DX 112, Tab 4.

[49] DX 113, Tab 5; Rogoff, R. 1750.

[50] DX 113, Tab 10; Mark, R. 2382.

[51] DX 113, Tab 9; Rogoff, R. 1766.

broad patent grant he thinks he has. The only feature of novelty in his allowed claims is in the phrase: "said tube having a resistence to cold plastic flow not significantly less than that of the metal of the ferrule." This is what Watts had distinguishing him from Smith. It has been called the "RCPF limitation". Burndy has used nothing from the Watts patent. Palpably Watts cannot be heard that his patent covers all plastics in the whole field of copolymers in the construction of electrical connectors.

4. The testimony in this case covers 3212 pages, there were several hundred exhibits, plaintiff's brief and proposed findings came to 180 pages, defendant's to 347 pages. As to the proposed findings, plaintiff filed 111, defendant 157, etc.[32] The trial took two months. There were many prongs to the defense. I have here limited my discussion to the basic issues of infringement and validity; otherwise the discussion would take on Gargantuan dimensions. I have considered the following defenses: 1. Watts deceived the Patent Office in getting his original patent; 2. his patent is invalid for vagueness and functionality; 3. all claims are invalid for public use more than one year before disclosure; 4. the reissue patent is invalid as to Claims 1 to 4 because these claims were abandoned by the reissue oath; 5. Claims 5, 6 and 7 are invalid because they are

[32] What I have done here, in making my findings under FR 52, is to rely on the master or critical facts. The proposed findings suggested by both parties deal, in the main, with a multitude of irrelevancies.

mis-descriptive, etc.; and 6. these claims are invalid because they are for an invention different from that of the original. There was evidence directed at all these issues, but it was insufficient to persuade me; it had no preponderance; it called for interpretation; there were only a few live witnesses on these issues; and, most of it was, at bottom, argumentative in nature. An appellate review may detect its importance; I cannot. In spite of these manifold arguments, urged by defendant Burndy, I think plaintiff AMP has a valid patent; but, it is neither as basic, nor as broad, as urged in this litigation.

III. Infringement

5. Claim 1 of the Watts reissue patent is typical; it reads as follows:

> "1. An electrical connector of the type intended to be crimped onto a wire and including a soft metal ferrule and a normally rigid tube of tough and stiffly flexible insulating plastic tightly embracing said ferrule and covering the outer surface thereof, said tube having a resistance to cold plastic flow not significantly less than that of the metal of said ferrule, whereby said tube can transmit sufficient crimping pressure to the ferrule from a crimping tool to crimp the ferrule against a conductor by plastic flow in the metal thereof without cracking the tube or otherwise interfering with its mechanical and electrical effectiveness."

The non-infringement defenses presented here are that the claims do not read on Burndy; and Burndy uses only prior teachings. These defenses involve the

issues as to what is within the scope of the patented claims, what are the nature and clarity of the disclosure, and what was disclaimed during the Patent Office prosecution, if the doctrine of file wrapper estoppel is to be applied.

[3] 5. The doctrine of file wrapper estoppel teaches an applicant for a patent whose claims are rejected and who later amends his claim, either by adding limitations or by cancelling the claims and inserting other claims that are more limited, is thereafter estopped to assert any interpretation of his restricted claims that does not give more to the added limitations. Added limitations are strictly construed against the patentee and are regarded as disclaimers of everything else in the claims. For example, the patentee cannot, after the issue of his patent, broaden his claim by dropping the element which he was compelled to include in order to secure his patent. Smith v. Magic City Kennel Club, 282 U.S. 784, 789-790, 51 S. Ct. 291, 75 L. Ed. 707; Schriber-Schroth v. Cleveland Trust Co., 311 U. S. 211, 217-218, 61 S. Ct. 235, 85 L. Ed. 132. In short, the inventor may not have recourse to recapture claims which he surrendered by amendment. Exhibit Supply Co. v. Ace Patents Corp., 315 U. S. 126, 136, 62 S. Ct. 513, 86 L. Ed. 736; Carter Products v. Colegate-Palmolive Co., D. C. Md., 164 F. Supp. 503, 4 Cir., aff'd 269 F. 2d 299; cert. den. 352 U. S. 843, 77 S. Ct. 43, 1 L. Ed. 2d 59. The doctrine of file wrapper estoppel has been applied in Delaware. Rohm & Haas Co. v. Permutit Co., D. C.

Del., 130 F. Supp. 260.[53] Under this doctrine, the Watts patent (if it be assumed valid) must be interpreted to accord to the recovery limitation so as to distinguish it from Smith. If this be so, then Burndy does not infringe. Burndy's insulation is a non-recovery type.

7. This is the crux: Watts disclosed and claimed a plastic which would recover to the "original size and form."[54] He was his own handicapper in the rapid race of the use of plastics. Burndy, as the science of the physical properties of these materials enfolded, used plastic sleeves of KEL-F and nylon on its connectors. The former is essentially like nylon in its properties.[55] Nylon is a non-recovery plastic;[56] it retains permanently the shape of a crimp,[57] which is a direct opposite of the Watts disclosure. On heating, it does not recover.[58] This is the direct opposite of the AMP vinyl.[59] AMP's vinyl chloride-vinyl acetate copolymers are essentially amorphous.[60] Nylon is principally crystalline.[61] Irv-O-Lite is rubber-like.[62] Nylon has no rubbery behavior.[63]

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[53] The doctrine was recently applied in an interesting case involving plastics. Van Brode Milling Co. v. Cox Air Gauge System, Inc., 9 Cir., 279 F.2d 313. For a general review of the doctrine, see Lewis v. Avco Manufacturing Corp., 7 Cir., 228 F.2d 919.

[54] Col. 3, line 22; Claim 2; Mark R. 1885-6; PX 11-21.

[55] R. 2107.

[56] Mark, R. 1853-56; Orowan, R. 844.

[57] Orowan, R. 827-8.

[58] Mark, R. 1855.

[59] Orowan, R. 830-2; Faules, R. 3003-4; DX 13.

[60] Orowan, R. 706.

[61] Orowan, R. 1036-7.

[62] Orowan, R. 846.

[63] Mark, R. 1852.

8. These, as the evidence so clearly demonstrates, are two different classes of plastics, being at opposite poles, in any spectrum of consideration, in their characteristics. For example, one interesting characteristic of the two classes illustrates a critical difference: If a strand of Irv-O-Lite and a strand of nylon are stretched, the behavior of the two are different. In the case of the former, it will have an elongation of between 50% and several hundred percent depending upon the composition of the polymer and the amount of plasticizer in the strand.[64] Upon removal of the force, it will contract until it recovers its original size and shape.[65] In the case of nylon, a small pull will not cause any significant elongation. For a larger pull, the strand will elongate up to about 400%, and then reach a new state in which it supports the pull.[66] Nylon becomes stronger per unit area of cross-section (i. e., will hold more pounds per square inch) as it stretches and becomes thinner. Upon removal of the load, the filament contracts only a few percent. The largest part of the elongation is permanent.[67] The process by which the original nylon filament is brought into this state of irrecoverable deformation is known as "cold drawing."[68]

Again, under compression, as in crimping, Irv-O-Lite assumes a set formation which it recovers after re-

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[64] Orowan, R. 844-8.

[65] Orowan, ibid.

[66] Mark, R. 1853-5; DX 122, 123; Orowan, R. 844.

[67] Mark, R. 1853.

[68] Mark, R. 1853-54.

moval of compression.[69] The recovery may be accelerated by heating.[70] While nylon, under compression, as in crimping, assumes a permanent set from which it has no tendency to recover.[71] And heating has no effect, short of melting.[72] Irv-O-Lite, during crimping, if it should be subjected to excessive stresses so as to produce cutting, upon removal of the stress, the cuts will slowly be closed by the gradual recovery of the material surrounding the cuts.[73] Nylon, under the same circumstances, upon removal of the stress, the cracks will not heal, but will remain as they formed.[74] There was ample illustration at the trial that there was, therefore, a fundamental difference between the complete recovery of Watts and the non-recovery of Burndy.

9. Moreover, Burndy does not infringe because it uses nylon—which is possibly as far as Burndy could go in commercial good-faith in avoiding use of anything disclosed by Watts and still use an independent plastic. A look at Smith and Grypma shows they used plastic rubber prior to Watts; and plastics were used for electrical insulation in many environments before Watts. Nylon was available to Watts. He, instead, named opposite characteristics; he may not now try to stretch his "Irv-O-Lite" to cover them.

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[69] R. 847.

[70] R. 848.

[71] Mark, R. 1853-56.

[72] R. 1855.

[73] Watts, R. 369.

[74] R. 2107.

10. In short, nylon does not have the basic characteristics of Irv-O-Lite, which was specified in the one vitalizing phrase of Watts' patent: "resistance to cold plastic flow." In sum, Watts' claim cannot be read on Burndy because, as stated, Burndy has no interest in "resistance to cold plastic flow"; Burndy's insulating sleeves are not "tightly embracing said ferrule"; and other claimed limitations are missing. I accept the RCPF limitation as construed by Burndy's expert, Dr. Hermann Mark.[75] His eminence in the theoretical and factual field of plastics was demonstrated at trial.[76] He explained to me the basis of his definition of RCPF;[77] he found no definition in the patent itself, nor in the file history.[78] I, too, was unable to find one. Flow, he said, is a process leading to deformation under the influence of external force, the extent of flow is measured by the deformation. However, "resistance to cold plastic flow" cannot be interpreted since there is no generally accepted method of measuring it in the literature. In contrast with his approach, plaintiff AMP's expert, Dr. Igor Orowan, whose eminence I well recognize, made several alternative suggestions.[79]

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[75] Dr. Mark's qualifications have been recognized as "admittedly one thoroughly familiar and skilled in the art of dealing with rubber and resins: United States Rubber Co. v. Marzall, D.C.D.C., 91 F. Supp. 1, 2; and one of the world's authorities in the field of polymer chemistry, La Maur, Inc. v. L. S. Donaldson Co., D.C.Minn., 190 F. Supp. 771, 774."

[76] R. 741, 755, 1831-34, 1838-9, 2035-36; DX 120.

[77] R. 2038-47

[78] R. 2038-40; PX 25.

[79] R. 2049-56; 2073-78.

His final suggestion, nevertheless, yielded the strange result that test data are unnecessary.[80] By contrast, under Dr. Mark's approach, not only a scientific but a legal consistency is found, e. g., Irv-O-Lite is within the scope of the Watts patent, whereas Spee-Dee rubber may be construed to be outside the patent, since it is in the prior art. And, as discussed infra, Burndy nylon and KEL-F are even farther from the patent claim. The examples are these: Irv-O-Lite has a permanent set of 15%, while that of dead soft copper is 36%.[81] The RCPF of Irv-O-Lite is not less than that of rubber and Watts' patent covers Irv-O-Lite. AMP's own test showed that Spee-Dee rubber has a permanent set of three times that of copper.[82] Its RCPF is one-third that of copper. AMP's tests show that nylon has a permanent set which is seven times that of copper.[83] Its RCPF is one-seventh that of copper. AMP's tests show that KEL-F has a permanent set 5.4 times that of copper.[84] Its RCPF is less than one-fifth that of copper. From this evidence it would appear, therefore, that Spee-Dee rubber has an RCPF significantly less (i. e., *not* "not significantly less") than that of the ferrule. Clearly nylon and KEL-F are still less and thus would appear to be complete non-infringements.

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[80] PF Q 45-46, Mark, R. 2078-9.

[81] DX 38, Test 9.

[82] DX 133, R. 2082-87.

[83] DX 133, R. 2088.

[84] DX 133, R. 2089-90.

11. In addition, Burndy's sleeves are not "tightly embracing said ferrule." The Watts patent[85] says that the sleeve "tightly engages" the ferrule. This is the basis for "tightly embracing" in Claim 1.[86] The patent teaches that this may be by a press fit[87] or by stretching and shrinking.[88] This was Dr. Sowa's idea; hence, the only "tightly embracing" which was part of Watts' invention was the press fit.[89] "Tightly embracing" is not a minor limitation. The reason Saran was unusable was that the sleeves could not be kept in place.[90] Here is a critical fact of observation—Burndy does not use a press fit or adhesive;[91] in certain connectors the ends are flared by belling to keep the nylon sleeve from sliding off.[92] [Belling is old and was used by Grypma[93] and is conceded not to be "tightly embracing".[94] In other connectors, a mechanical interlock is used.[95]]

12. AMP uses stretching, followed by baking, to shrink the sleeve on the ferrule. This keeps the seam formed by edges of the ferrule sealed, keeps the sleeve

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[85] Col. 3, line 16.

[86] Watts, R. 356-7.

[87] Line 18.

[88] Lines 19-21.

[89] R. 3560-7.

[90] Watts, R. 205-6.

[91] Rogoff, R. 1620-22.

[92] R. 1620-21.

[93] Grypma, R. 1078.

[94] Watts, R. 358.

[95] Rogoff, R. 1620-26; DX 11, 12, 115, 116.

on the ferrule and keeps it from snapping open during crimping.[96] A look at Burndy shows the ferrules are seamless or brazed[97] and do not need or obtain the first and third of these advantages.[98] In short, Burndy sleeves are kept on the ferrule by different means, i. e., belling or mechanical interference or interlocks.[99] Such a mechanical means for holding the sleeve on the ferrule is not "tightly embacing".[100] At the trial, an attempt was made to show that some Burndy sleeves were tight.[101] The sleeves had dried out and shrunk by allowing the moisture they contained to evaporate.[102] In commercial practice, however, the convincing evidence shows the Burndy sleeves are kept moisturized until used by the customer.

I have finished with Claim 1; but, in detail, Claim 2 is also not infringed. Burndy's nylon tubes do not have "plastic memory"; and it does not tend "gradually to recover its original form after severe deformation";[103] in fact, they do not recover after crimping.[104] As Burndy does not use adhesive between the plastic

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[96] Holcombe, R. 491-8

[97] Fanwick, R. 1390; Rogoff, R. 1591-92

[98] Holcombe, R. 495, 47-8.

[99] R. 1620-4

[100] Mark, R. 2105; Rogoff, R. 1620-21; Holcombe, R. 591-4

[101] R. 3156-9.

[102] R. 3160-2.

[103] Fanwick, R. 3162-3.

[104] Mark, R. 2106-7

[105] Crowan, R. 2770-3.

tube and the insulation of wire,[106] plaintiff AMP concedes non-infringement here.[107]

Claim 4 should also be considered, although ignored by plaintiff, and I think it is not infringed. Burndy's SEALINK connectors do not have a "thin metal sleeve" which "surrounds" its plastic tubes.[108] In these connectors, Burndy uses two narrow copper collars on the outside of the nylon tube. They are not over the bare wires and there is no metal ferrule underneath them.[109] The ferrule is not crimped through them. They are only used to provide a seal to keep out moisture.[110]

Claims 5 and 6 are not infringed because Burndy's nylon and KEL-F do not "substantially" retain the "shape of the recess." These two materials take a permanent set and retain the indent forever. Claim 7 is not infringed because Burndy's materials do not have a "tendency to return, at least to some extent."

13. This is the finding of no infringement: Burndy uses only the prior art teachings of Smith, Grypma, Heidebrecht, and the Bakelite Review Article that teaches the vinyl plastics, particularly vinyl chloride-vinyl acetate, are a substitute for rubber for insulating coverings for wires and cables; the Douglas article in

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[106] Rogoff, R. 1620.

[107] R. 2103.

[108] R. 2103.

[109] Mark, R. 2107-09.

[110] Ibid.

Industrial and Engineering Chemistry teaches that these two copolymers are better than rubber for wire coating and "controlled hardness may be secured by adjusting the concentration of the plasticizer"; likewise Pfeffer and Patnode teach that various other plastics have the hardness to allow crimping of a metal through them; Miller, Schatzel, Bureau of Standards, and Blades, all teach a knowledge of the vinyl copolymer and its characteristics; and, the prior art, in fact, teaches to seek plastics as substitutes for rubber and other insulation. Watts by the monopoly of his patent grant cannot encompass the physical qualities of all plastics. He has a grant of patent novelty—but, a limited one. He has limited his own monopoly.

14. I conclude:

1. Defendant Burndy is not an infringer.

2. Plaintiff's patent, without determining its breadth or scope, is valid.

3. Both the complaint and defendant's counter claim should be dismissed.

The order of dismissal should provide that each party should bear it's own costs and no counsel fees will be awarded.

Opinion of Court of Appeals

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

No. 14,485
No. 14,486

AMP INCORPORATED,
(*Appellant* in No. 14,485)
v.
BURNDY CORPORATION, and
ARTCRAFT ELECTRIC SUPPLY CO.
(*Appellants* in No. 14,486)

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

Argued March 9, 1964

Before: BIGGS, *Chief Judge*; and HASTIE and SMITH, *Circuit Judges*.

Decided May 18, 1964

By HASTIE, *Circuit Judge*.

This is a patent infringement suit, with a counterclaim asking that the court declare the plaintiff's patent invalid. AMP Incorporated, the plaintiff below, owns patent No. Re. 23,688 granted July 21, 1953 as a re-issue

of an original patent No. 2,410,321, issued October 29, 1946 on the application of William S. Watts, the plaintiff's employee. The devices here accused of infringing the Watts patent were manufactured and marketed by the defendant Burndy Corp. The defendant Artcraft Electric Supply Co. is a dealer who has sold the accused devices.

The district court, sitting without a jury, found that the Watts patent was valid, but that the Burndy devices did not infringe it and, therefore, entered judgment denying relief on both claim and counterclaim. 215 F. Supp. 3. Both the plaintiff and the defendants have appealed.

The patent in suit is for a pre-insulated electrical connector, a mechanical device for joining stripped end portions of two insulated wires so as to close the circuit effectively and provide a continuous insulated conductor. The Watts patent discloses a tubular metal ferrule within a closely fitting insulating rubbery plastic sleeve. The stripped ends of the wires to be connected are inserted in the ends of the hollow ferrule. External pressure is then applied, usually with a crimping die, to and through the plastic sleeve with sufficient force to compress and flatten the metal ferrule and the enclosed stripped wire ends into extensive lasting surface-to-surface contact.

Watts was not the first inventor in the field of pre-insulated electric connectors. The concept of a pre-insulated soft metal tube through which inserted wire ends could be effectively connected by crimping was not

original with him. Indeed, the Patent Office rejected his original patent application for his device, filed December 14, 1943, as both indefinite and "unpatentable over the Smith patent".

The Smith patent, No. 2,173,668, issued September 19, 1939, disclosed a pre-insulated electrical connector consisting of a "ductile metallic tubing", a surrounding layer of "insulating material such as rubber", and an outer "protective sheath of a flexible and pliable character, preferably formed of woven rubberized thread or cord. . . ." Wire ends inserted into this device were connected by crimping accomplished through external pressure. The original Watts application claimed "an electrical conductor which comprises a soft metal ferrule adapted to be permanently crimped onto a wire, a normally rigid tube of tough, stiffly flexible plastic tightly embracing said ferrule, the thickness and toughness of the plastic being such as to transmit to the metal, in a narrow area adjacent a fold formed by flattening of the ferrule, sufficient pressure to coin the metal of the ferrule". It will be observed that in this original statement Watts was claiming in general terms a device which, as described, disclosed nothing new except the substitution of "tough, stiffly flexible plastic" for Smith's "insulating material such as rubber". The hollow metal connecting tube, the insulating sleeve and the crimping process all were old and all were present in Smith.

Acceding to the Patent Office rejection, Watts withdrew his original claims and amended his application,

adding in each claim a new statement that his plastic sleeve had "a resistance to cold plastic flow not significantly less than that of the metal of said ferrule". In the explanatory remarks accompanying and supporting this amended application, Watts stressed this recital as to the resistance of his insulating sleeve to cold plastic flow as his inventive discovery beyond the disclosures of the prior art and beyond the claims of his disapproved original application. On this showing the claims were approved and the Watts patent issued.

Much of the controversy in this case concerns the meaning of the phrase "resistance to cold plastic flow". However, at this point it will suffice to say that the Patent Office found in this stated property of the Watts insulating material, meaningful specificity and an inventive differentiation from the prior art. Certainly nothing else appears or was claimed which significantly differentiates the rejected and withdrawn original claims from the amended claims which became the Watts patent. Moreover, under the doctrine of file wrapper estoppel, the patentee, having acceded to the rejection of his original claims as lacking invention over Smith and having amended his claims to include relative resistance to cold plastic flow as a definitive characteristic distinguishing his device from Smith, cannot now be heard to claim patentable novelty in any other disclosure of his original patent or the reissue based upon it. *Exhibit Supply Co. v. Ace Patents Corp.*, 1942, 315 U. S. 126; *Smith v. Magic City Kennel Club*, 1931, 282 U. S. 784.

Thus, our problem is narrowed to a determination whether it can properly be held, as the Patent Office found, that the description of Watts' insulating sleeve as "a tough, stiffly flexible plastic . . . having a resistance to cold plastic flow not significantly less than that of the metal of said ferrule" was a disclosure of invention beyond the prior art.

The witnesses in this case attributed different meanings to the phrase "resistance to cold plastic flow". On behalf of the defendants it was asserted that this phrase connoted resiliency or capacity to return in degree to original form after the removal of compressing or deforming stress. AMP, however, attempted to prove that the phrase connotes resistance to breaking or cracking under stress. One witness testified that the phrase had no generally accepted meaning in science. At most then, the allegedly inventive discovery of Watts was merely that the functioning of a familiar type of electrical connector could be improved by substituting for "an insulating material such as rubber", a plastic tough enough and resilient enough to withstand breaking, cracking and excessive permanent deformation as a result of such pressure as would be required for effective crimping. In this connection Watts set out in his specifications that he had used as an advantageous insulating material "a vinyl chloride vinyl acetate copolymer, slightly plasticized" which was then produced and commercially available under the name "Irv-O-Lite".

It is also significant that publications antedating Watts' patent application and made part of the present

record had disclosed that vinyl copolymers might advantageously be substituted for rubber as insulating coverings for cables and wires. The literature stressed the toughness of these products and pointed out that flexibility and other properties could be varied by the use of plasticizers. Thus advised, Watts found one of these commercially available vinyl copolymers, Irv-O-Lite, to be an advantageous material for his insulating sleeve.

Anyone familiar with pre-insulated electrical connectors must have known that the efficient functioning of such devices required that the insulating sleeve be made of a material through which enough force could be transmitted to crimp the enclosed ferrule and wires adequately without so damaging or so greatly and permanently deforming the sleeve as to impair its effectiveness as an insulator. If a material possessed these properties in such degree and combination that it would withstand crimping better than rubber, as the publications concerning vinyl copolymers must have suggested, its substitution for rubber as the insulating material in an electrical connector would obviously be advantageous. Yet the essence of Watts' teaching, expressed in language of relative resistance to cold plastic flow, was merely that the material of the insulating sleeve should have these obviously desirable properties and that a rubbery plastic like Irv-O-Lite was such a material.

These considerations make this a particularly appropriate case for applying the general rule that the

substitute of a superior material for an inferior one in a known device is not invention even though the new material more satisfactorily serves or performs the intended function of the old." *Sinclair & Carroll Co. v. Interchemical Co.*, 1945, 325 U.S. 327; *Hotchkiss v. Greenwood*, 1850, 52 U.S. (11 How.) 248; *General Foods Corp. v. Triangle Mfg. Co.*, 7th Cir. 1958, 253 F.2d 227; *Patrol Valve Co. v. Robertshaw-Fulton Controls Co.*, 5th Cir. 1954, 210 F.2d 146. This court's discussion and application of this principle more than 20 years ago in *Fowler v. Hongerbilt Products*, 1942, 131 F.2d 153, continues to be sound and is in point here.

We conclude, therefore, that the original Watts patent, No. 2,410,321, was invalid for want of invention. It necessarily follows that the reissue patent in suit is also invalid, since it cannot avoid the definitive and essential limitations upon which the claim of invention over Smith was predicated in the original patent.

This holding makes it unnecessary to consider whether the accused devices, pre-insulated connectors in which nylon sleeves were used, infringed the Watts patent.

Finally, we have considered the contention of appellee, Burndy Corporation, that it should be awarded attorneys' fees. We find no such unfair or unreasonably vexatious conduct by AMP in instituting or conducting this litigation as to call for this extraordinary allowance. Therefore, though the defendants below prevail on this appeal, their costs in this court shall not include any attorney's fee.

Because our conclusion that the patent in suit is invalid differs from the decree of the district court declaring the patent in suit valid but not infringed, that judgment will be vacated and the cause remanded for the entry of a judgment consistent with this opinion.

Constitutional Provision Involved

Article I, Clause 8:

The Congress shall have the power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.

Statutes Involved

Title 35:

§ 103. Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

§ 282. Presumption of validity; defenses

A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it.

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